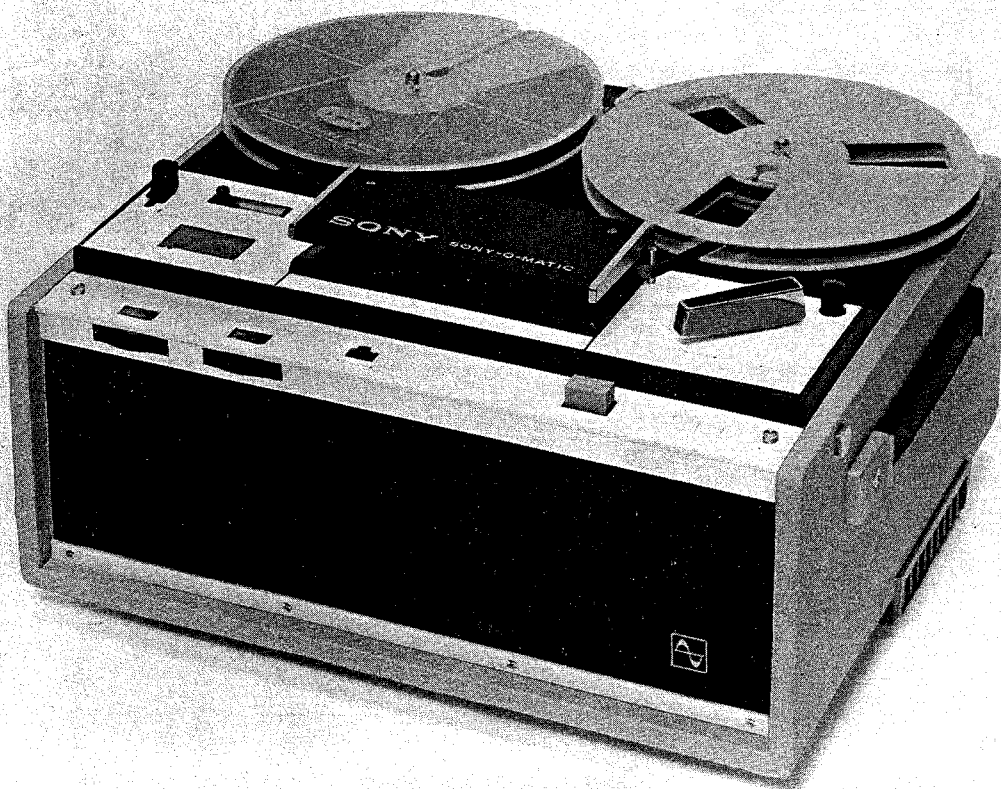


TC-357-4

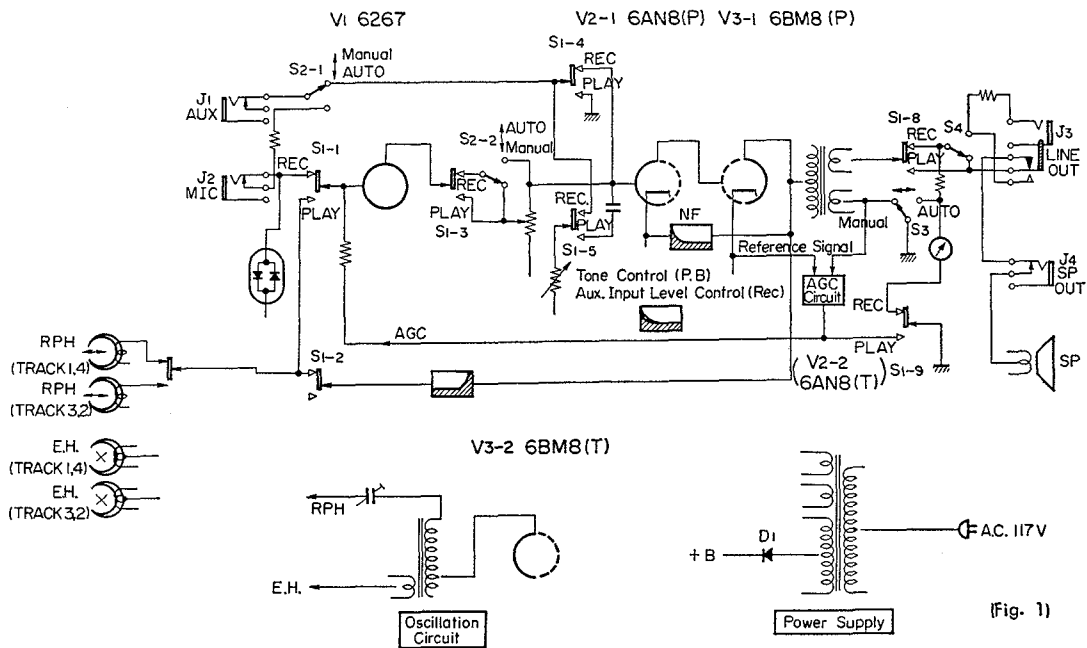


Specifications

Power Requirement :	60 watts 100, 110, 117, 125, 220 or 240 volts (Voltage Selector provided in the set) AC 50 or 60 c/s (convertible, see Page 4)
Tape Speeds :	Instantaneous selection 7-1/2 ips, 3-3/4 ips or 1-7/8 ips (19, 9.5 or 4.75 cm/s)
Tracks :	4 Track, monophonic
Recording Time :	45 minutes per track, 3 hours in total at 7-1/2 ips 1.5 hours per track, 6 hours in total at 3-3/4 ips (Super 7 Tape) 3 hours per track, 12 hours in total at 1-7/8 ips
Reel Size :	Up to 7"
Frequency Response :	40~15,000 c/s at 7-1/2 ips 40~12,000 c/s at 3-3/4 ips 40~ 6,000 c/s at 1-7/8 ips
Flutter and Wow :	Less than 0.12% RMS at 7-1/2 ips Less than 0.20% RMS at 3-3/4 ips
Bias Frequency :	Approx. 55 Kc
Inputs :	High impedance Microphone input (1) High impedance Auxiliary input (1)
Outputs :	High impedance Line output (1) 8 Ω External Speaker output (1)
Speaker :	6" \times 4" (15 \times 10 cm) PM dynamic, 8 Ω
Power Output :	Maximum 2 watts
Tube Complement :	6Z67 (\times 1), 6AN8 (\times 1), 6BM8 (\times 1)
Diodes :	1T22 (\times 1), SE-05D (\times 1)
Dimensions :	14.8" W \times 12.2" D \times 7.9" H (375 \times 310 \times 200 mm)
Weight :	Approx. 22 lbs. (10 Kg) (without accessories)

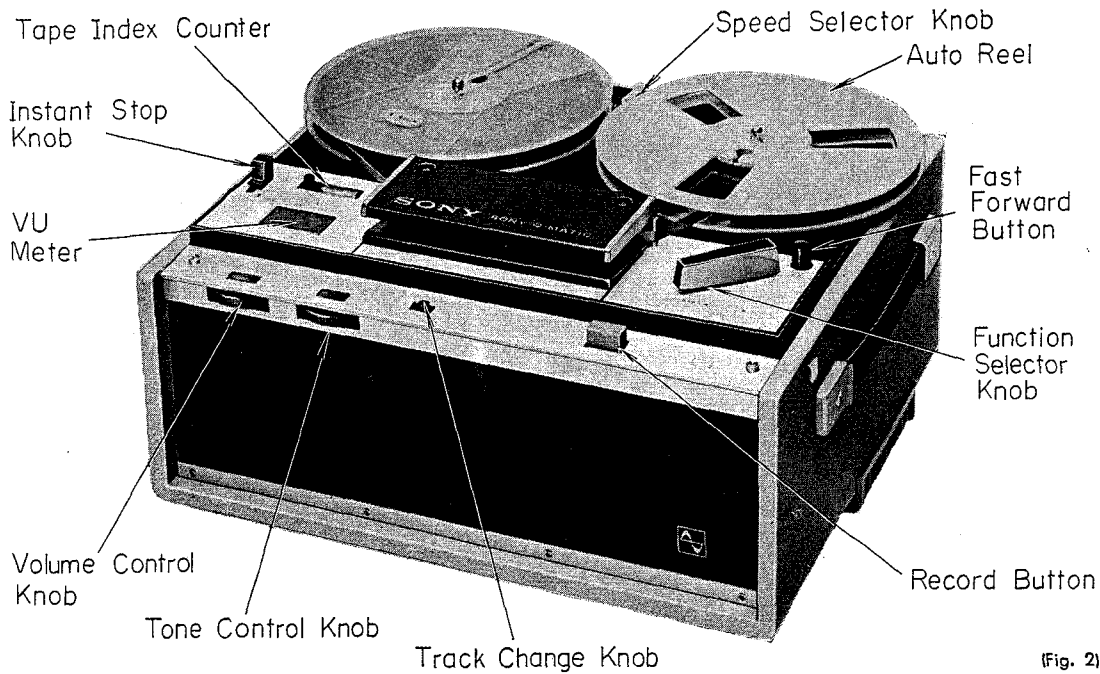
SONY®
SERVICING GUIDE

Block Diagram



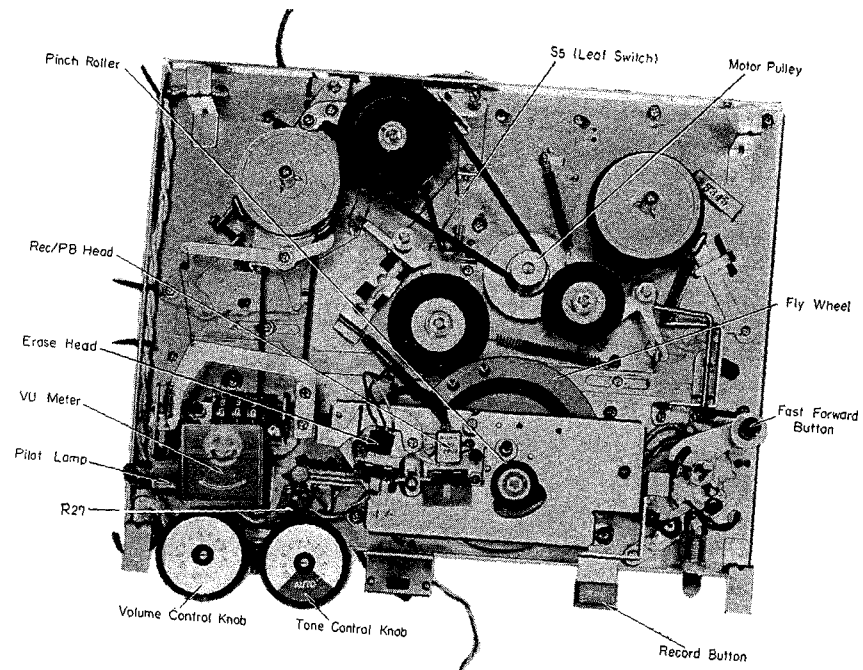
(Fig. 1)

CABINET



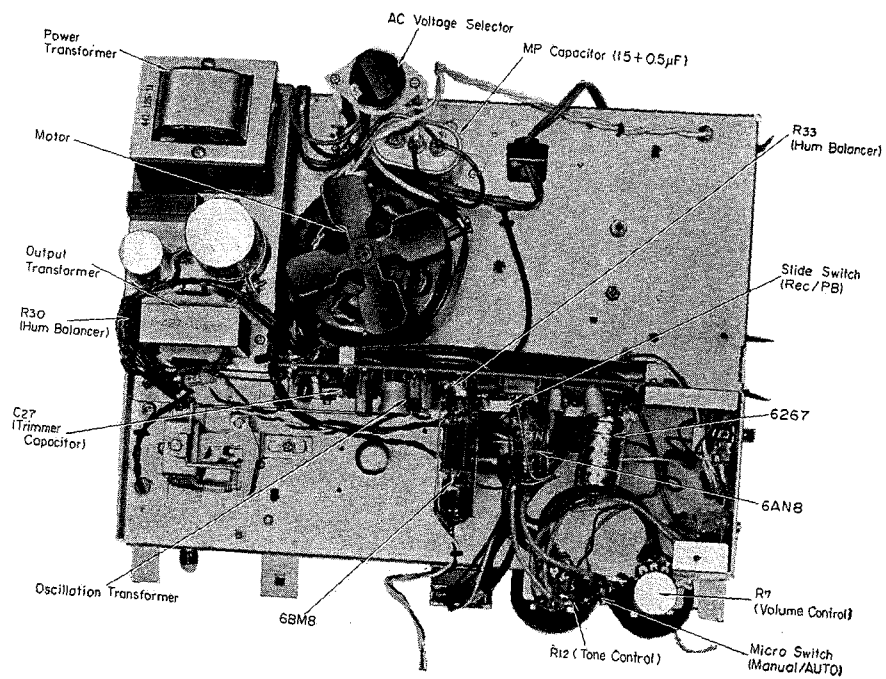
(Fig. 2)

MECHANICAL SECTION



(Fig. 3)

AMPLIFIER SECTION

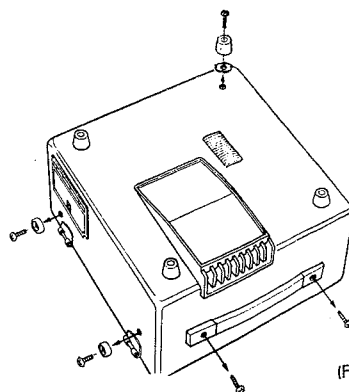


(Fig. 4)

REMOVAL OF CABINET

- 1) Turn upside down the recorder on a soft pad
- 2) Remove five screws as shown in Fig. 6.
- 3) Lift Cabinet gently.

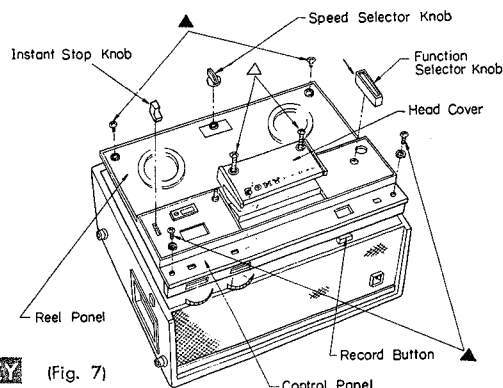
Now Printed Circuit Board can be checked.



(Fig. 6)

REMOVAL OF REEL PANEL AND CONTROL PANEL

- 1) Remove two Head Cover Holding Screws.
- 2) Remove Speed Selector Knob and Instant Stop Knob by pulling off.
- 3) Remove Function Selector Knob after loosening set screw
- 4) Remove four screws on each corner.
- 5) Remove Reel Panel.
- 6) Press Record Button and remove Control Panel by pulling slightly forward.



(Fig. 7)

MODIFICATION TO DIFFERENT POWER LINE FREQUENCY

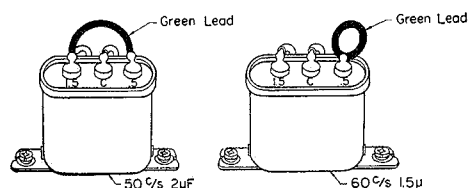
	For 50 c/s	For 60 c/s
1. Connection between two terminals of the metal cased capacitor (MP, C ₂₁)	Connected (2 μ F)	Disconnected (1.5 μ F)
2. Motor Pulley	3-418-118 45.9 mm ϕ	3-418-119 38.2 mm ϕ

LUBRICATION

Type of Oil : SONY Oil, OL-1 K or light machine oil.

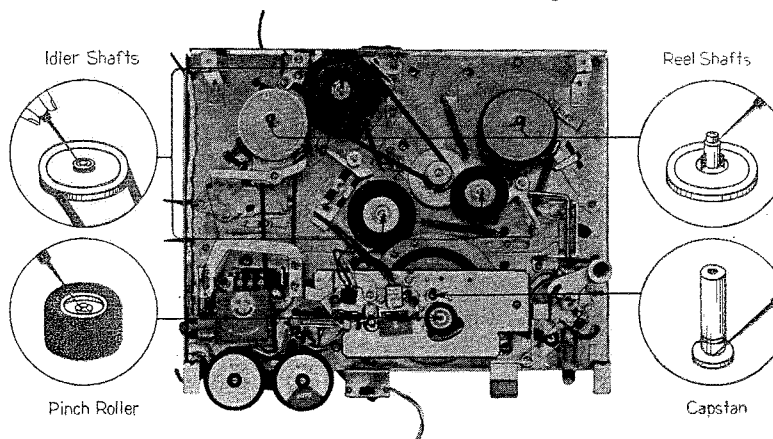
Quantity of Oil : 1 drop every 300 hours of use to each part.

Parts to be lubricated : See illustration below (Fig. 9).



(Fig. 8)

NOTE: Avoid excessive lubrication
It will cause slippage in the mechanism and contamination of the tape.



(Fig. 9)

Technical Features

Automatic Level Control

When the recorder is set to AUTO, recording level adjustment is entirely unnecessary.

The newly developed Automatic Level Control Circuits assure stable and undistorted recording even for the loudest recording source, which would saturate the amplifier in conventional tape recorders.

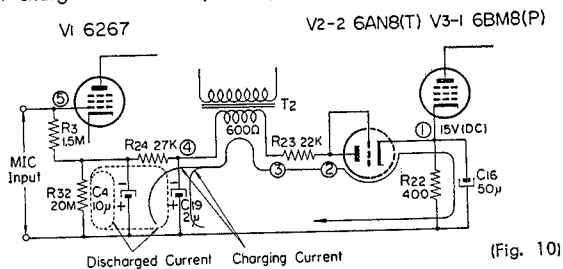
a. AGC Circuit

Cathode bias voltage (① in Fig. 10) of V_{2-2} is 15 V DC which is common with that of V_{3-1} .

Grid and plate of V_{2-2} are connected together and are connected to secondary terminal of Output Transformer T_2 through R_{23} .

The AGC circuit operates as follows. (Refer to Fig. 10)

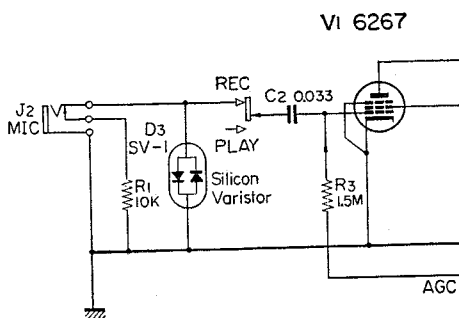
- 1) Recording signal source is amplified and appears at secondary terminals of the Output Transformer, ③ and ④.
- 2) When the input signal level is too high and the plate voltage of V_{2-2} at ② exceeds 15 V, DC current will flow in the direction of arrow shown in Fig. 10 and will charge the electrolytic capacitors, C_4 and C_{19} , with the polarities as shown in Fig. 10.
- 3) The negative voltage is then applied to the grid of V_1 , ⑤, through R_8 and shifts the operating point of the tube to lower the gain of the amplifier.
- 4) When voltage of V_{2-2} at ② gets below 15 V, V_{2-2} is cut off again and the current stops to run.
- 5) Then C_4 and C_{19} begin to discharge gradually through R_{23} and R_{24} and the original grid bias voltage of V_1 is restored.



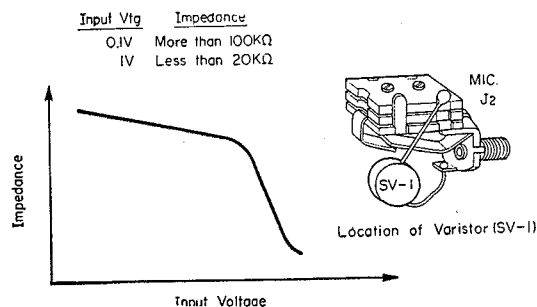
(Fig. 10)

b. Varistor Circuit

Silicon Varistor, D_3 is inserted in parallel with MIC input circuit. The characteristic curve is shown in Fig. 12. When recording signal level is normal, D_3 has practically no effect on input circuit due to its very high impedance (100 K Ω at 1Kc). In case input signal level exceeds approximately 0.1 V, impedance of D_3 decreases according to the curve shown in Fig. 12 and the signal is applied to V_1 in compressed form. (For input level of 1 V, the impedance is less than 20 K Ω at 1 Kc.)



(Fig. 11)

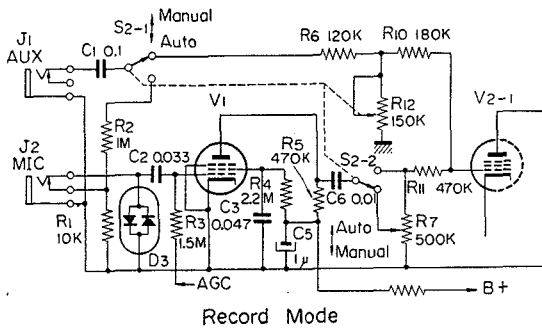


(Fig. 12)

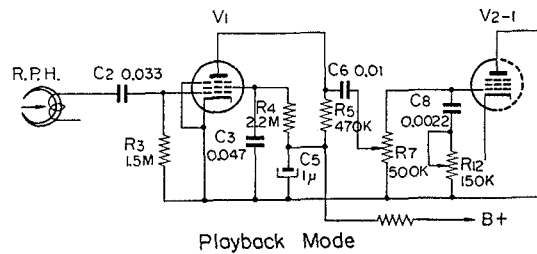
Volume Controls

Mode	R_{12}	R_7
Record		
Manual	Aux. Input Volume Control	MIC Volume Control
Auto		
Playback	Tone Control	Volume Control

When the recorder is set to MANUAL recording, Aux. input and MIC input signals can be controlled with R_{12} and R_7 respectively and mixing of the signals can be made.



(Fig. 13)



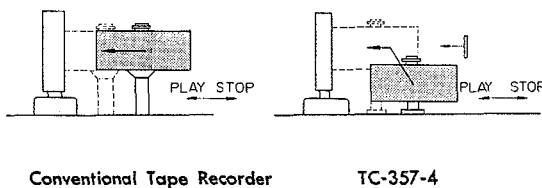
(Fig. 14)

Retractable Pinch Roller

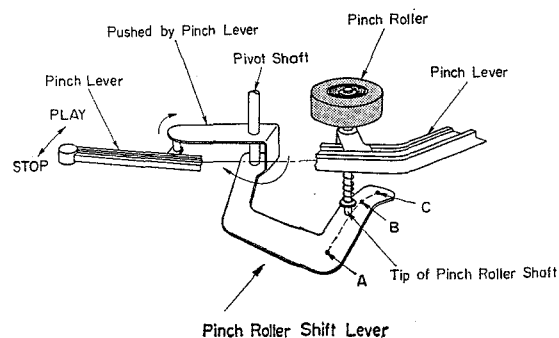
When the recorder is placed in stop condition, the Pinch Roller is retracted as shown in Fig. 15 for easier and faster loading of tape.

When the recorder is set to Record or Playback mode, the Pinch Roller will come up to transport tape with Capstan in the order of ①, ②, ③ and ④ as shown in Fig. 16.

- ①. One end of the Pinch Roller Shift Lever is pushed by Pinch Lever in the direction of arrow.
- ②. The Pinch Roller Shift Lever is turned clockwise around the shaft.
- ③. The tip of Pinch Roller Shaft goes up along the slope, ① to ②.
- ④. The tip of the Pinch Roller Shaft shifts on the flat part of the Pinch Roller Shift Lever, ② to ③.



(Fig. 15)



(Fig. 16)

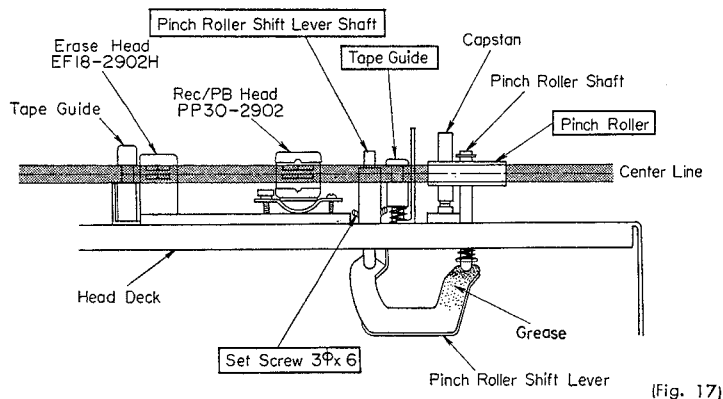
ALIGNMENT PROCEDURE

The alignmet is to be performed at a tape speed of 7-1/2 ips and with track selector switch set to CH-1 unless otherwise specified. Connect an 8 Ω load resistor in parallel with the VTVM terminals and connect the VTVM to the EXT. Speaker Jack (J₄).

Elevation Alignment

The exact vertical positionings of the Heads are adjusted at the factory and should never need readjustment. However, when replacing Head, Tape Guide or Pinch Roller, height of the replaced part in relation to the tape must be checked as follows ;

- 1) Set the recorder to stop.
- 2) Thread a tape.
- 3) Align the upper edges of the Erase Head core and Rec/PB Head core and upper edge of the tape by turning the Tape Guide.
- 4) Loosen two set screws on the Shaft for Pinch Roller Shift Lever and adjust its height so that the center of tape and Pinch Roller coincide.
- 5) Playback the tape and make sure that the tape runs just on the central part of the Pinch Roller.



Azimuth Alignment

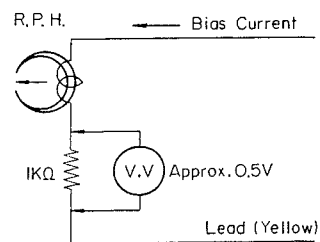
- 1) Playback a 10 Kc signal recorded on the first section of the SONY alignment tape "B-19-K1".
- 2) Turn azimuth alignment screw located on the right side of the Playback Head to obtain the maximum reading on the VTVM.

Recording Level Meter Adjustment

- 1) Connect a VTVM to the Line Out Jack.
- 2) Set Aux. Volume Control at extreme counter-clockwise position. (Take care not to switch to AUTO position.)
- 3) Feed a 1 Kc signal of -48 dBs (3 mV) into MIC Jack.
- 4) Place the recorder in record mode.
- 5) Set MIC Volume Control (R_7 , Fig. 4) so that the VTVM reads 3dBs (2.45 V).
- 6) Adjust potentiometer (R_{27} , Fig. 3) so that the pointer of the Level Meter is just on the boundary line of red portion and black portion.

Recording Bias Adjustment

- 1) Unsolder ground lead (yellow) on the terminal of Rec/PB Head.
- 2) Insert a VTVM and a $1\text{K}\Omega$ resistor in parallel between the Rec/PB Head and the lead. (See Fig. 18)
- 3) Place the recorder in record mode.
- 4) Adjust Trimmer Capacitor (C_{27} , in Fig. 4) to obtain 0.5 V reading on the VTVM.

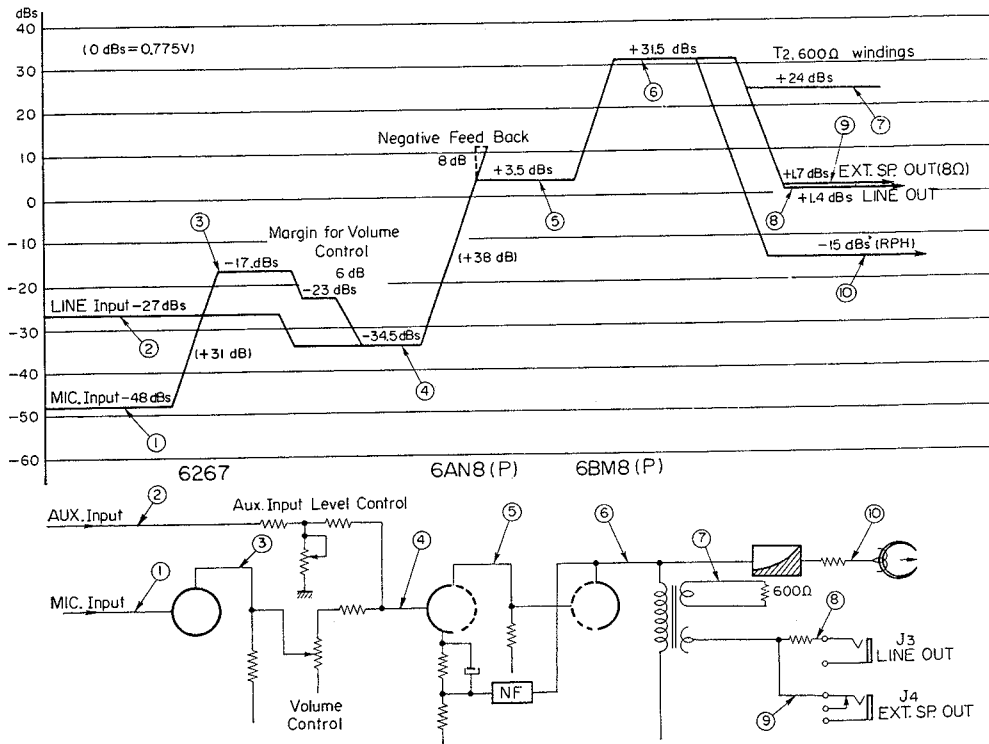


(Fig. 18)

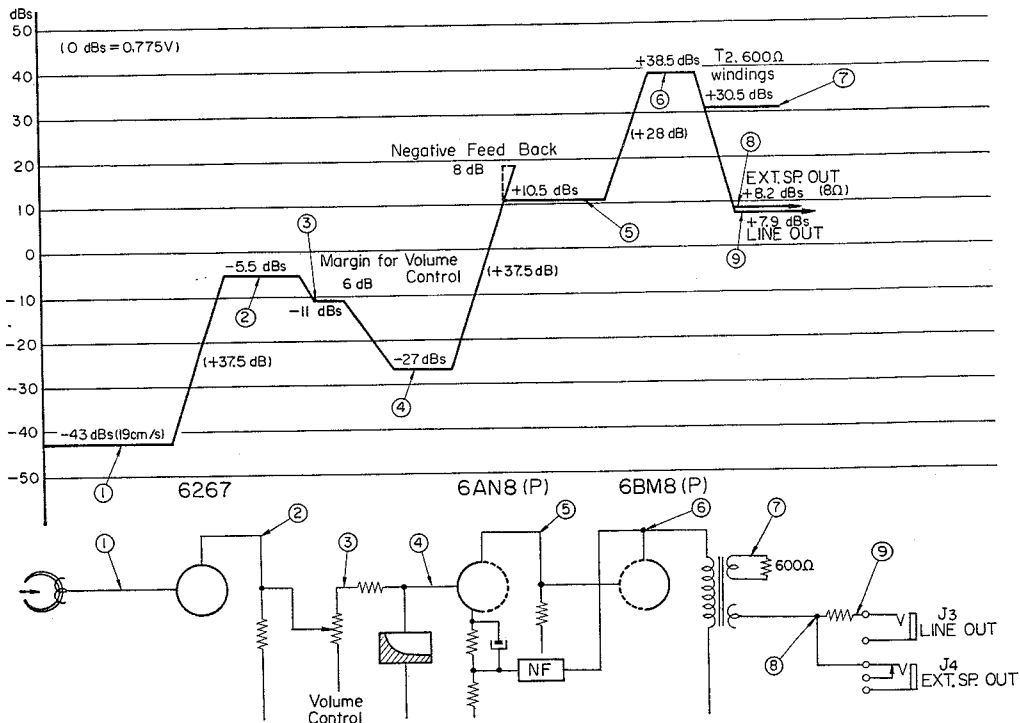
Hum Balancing

- 1) Place recorder in play mode.
- 2) Turn Playback Volume Control (R_7) and Tone Control (R_{12}) counter-clockwise to the full.
- 3) Adjust potentiometer (Hum Balancer, R_{33} in Fig. 4) for the minimum reading on the VTVM.
- 4) Turn Playback Volume Control clockwise to the full.
- 5) Adjust potentiometer (Hum Balancer, R_{30} in Fig. 4) for the minimum reading on the VTVM.

Recording Level Diagram



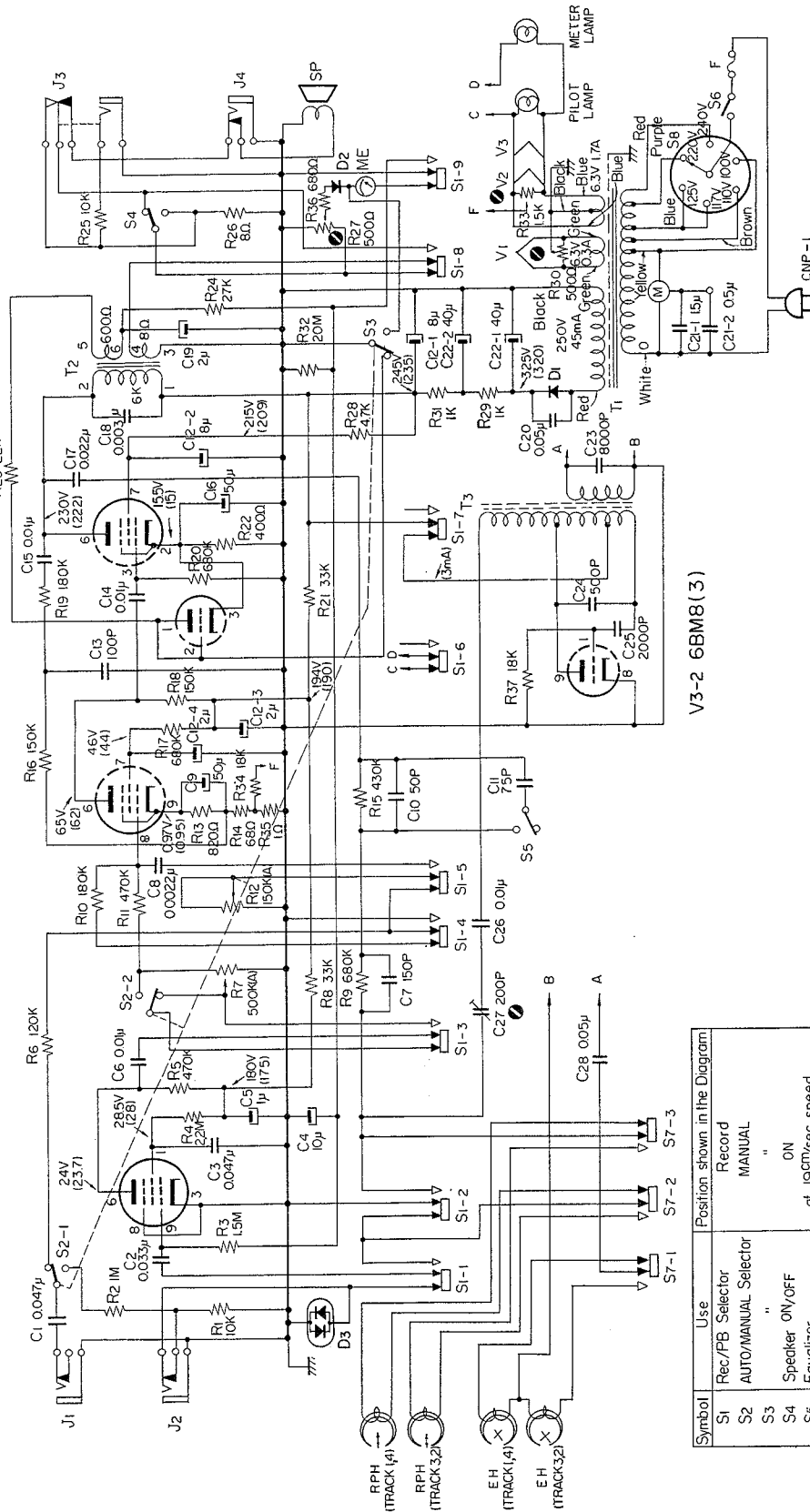
Playback Level Diagram



Schematic Diagram

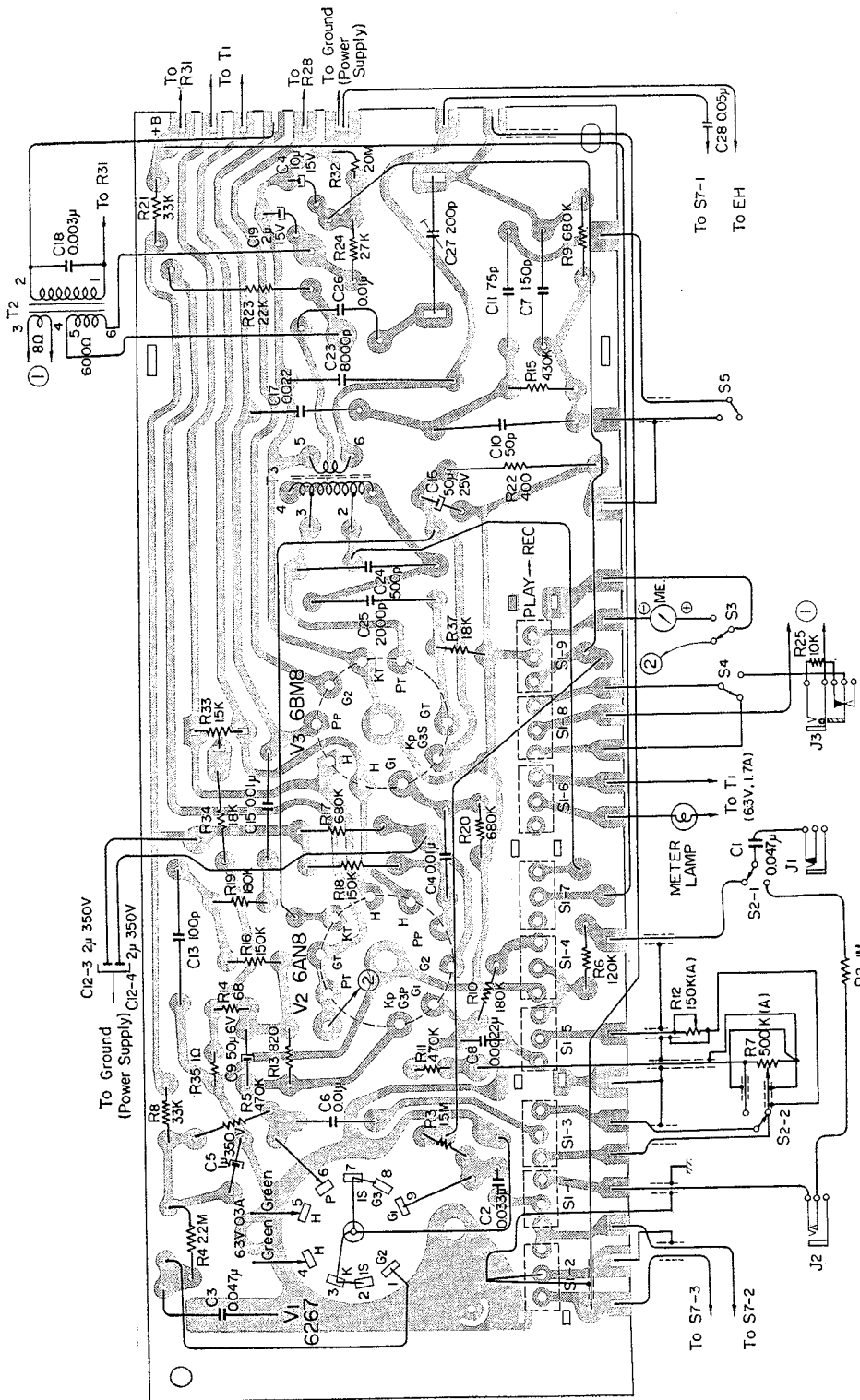
V1 6267

V2-1 6AN8S(5) V2-2 6AN8S(3) V3-1 6BM8(5)



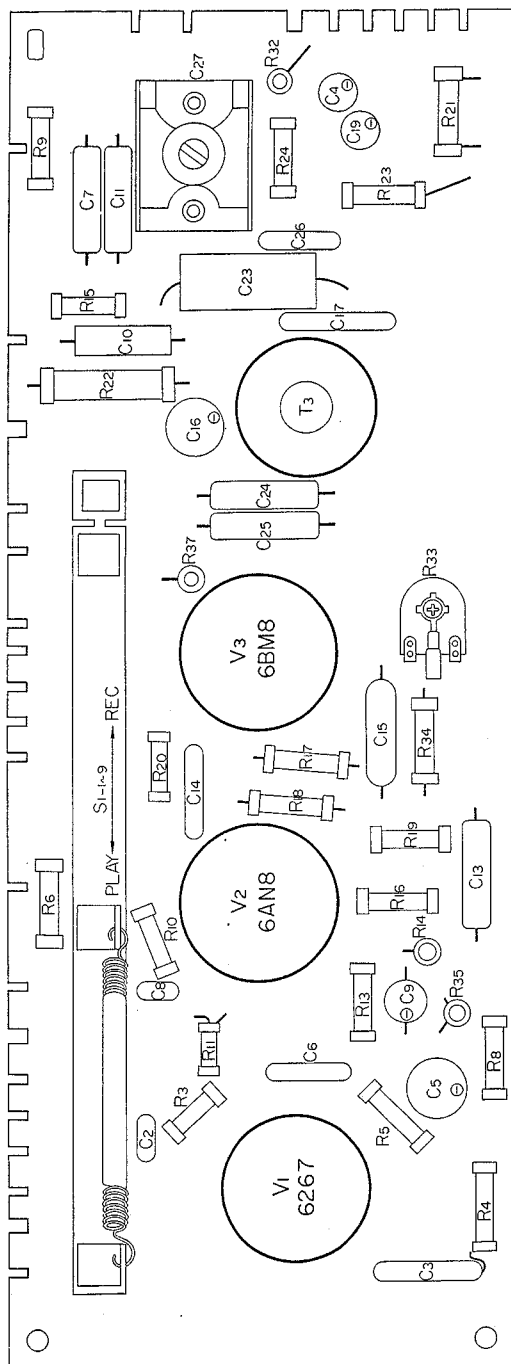
Symbol	Use	Position shown in the Diagram
S1	Rec/PB Selector	Record
S2	AUTO/MANUAL Selector	MANUAL
S3	"	"
S4	Speaker ON/OFF	ON
S5	Equalizer	at 19cm/sec. speed
S6	Power ON/OFF	OFF
S7	Track Selector	Track 1, 4

C21-2 is to be disconnected for power line frequency of 60 c/s.
Values in parentheses are measured with VTVM in recording position.



Mounting Diagram

—Parts Side—



Electrical Parts List

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
V1	VACUUM TUBE 6267	1	CP1	CLAMP PIN for V1, V2	2
V2	VACUUM TUBE 6AN8	1	CP2	CLAMP PIN for V3	1
V3	VACUUM TUBE 6BM8	1	ME	VU METER	1
D1	DIODE SE-05D	1	J1, 2, 4	MINI-JACK, Aux. Input, Microphone & Ext. Speaker	3
D2	DIODE 1T22	1	J3	MINI-JACK, Line-out	1
D3	VARISTOR SV-1	1	PL	PILOT LAMP	2
RPH	REC/PLAYBACK HEAD PP30-2902	1	PS	SOCKET, Pilot Lamp	2
EH	ERASE HEAD EF18-2902H	1	FH	FUSE HOLDER	1
MO	MOTOR IC-624S1	1	F	FUSE (1A)	1
T1	POWER TRANSFORMER (Pri. 100-110-120-220-240 V) (Sec. 6.3 V 250 V)	1	RB	RUBBER BUSHING	4
T2	OUTPUT TRANSFORMER	1	TS1	TERMINAL STRIP 4 P	1
T3	BIAS OSCILLATOR TRANSFORMER	1	TS2	" " 5 P	1
L1	HUM BUCK COIL	1	TS3	" " 3 P	2
S1	SLIDE SWITCH, Record/Playback	1	TS4	" " 5 P-small	2
S3	MICRO SWITCH, Manual/Auto	1	TS5	TERMINAL STRIP, Hum Buck Coil (2 P)	1
S4	SWITCH, Speaker	1	SP	SPEAKER	1
S5	LEAF SWITCH, Tape Speed Equalizer	1	PC	AC POWER CORD with Plug	1
S7	SLIDE SWITCH, Track Change	1	VA	AC VOLTAGE SELECTOR (Plug & Socket/Pair)	1
VS1	VACUUM TUBE SOCKET 9P (Cushion)	1	CB	PRINTED CIRCUIT BOARD (without any components)	1
VS2	VACUUM TUBE SOCKET	2			
SC	SHIELD CASE, Vacuum Tube	1			

—RESISTORS—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
R7	VOLUME CONTROL, 500K Ω with Switch	1	R17	CARBON 680K Ω $\pm 5\%$ $\frac{1}{4}W$	1
R12	TONE CONTROL, 150K Ω with Switch	1	R18	" 150K Ω " "	1
R27	SEMI-FIXED, 500 Ω	1	R19	" 390K Ω " "	1
R30	" "	1	R20	" 680K Ω " "	1
R33	" 1.5K Ω	1	R21	" 33K Ω " "	1
R1	CARBON 10K Ω $\pm 5\%$ $\frac{1}{4}W$	1	R22	" 400 Ω " "	1
R2	" 1M Ω " "	1	R23	" 22K Ω " "	1
R3	" 1.5M Ω " "	1	R24	" 27K Ω " "	1
R4	" 2.2M Ω " "	1	R25	" 10K Ω " "	1
R5	" 470K Ω " "	1	R26	WIRE WOUND 8 Ω $\pm 10\%$ 4W	1
R6	" 120K Ω " "	1	R28	CARBON 4.7K Ω $\pm 5\%$ 1W	1
R8	" 33K Ω " "	1	R29	WIRE WOUND 1K Ω $\pm 10\%$ 4W	1
R9	" 330K Ω " "	1	R31	" 1K Ω " "	1
R10	" 180K Ω " "	1	R32	COMPOSITION 20M Ω $\pm 20\%$ $\frac{1}{2}W$	1
R11	" 470K Ω " $\frac{1}{8}W$	1	R34	CARBON 18K Ω $\pm 5\%$ $\frac{1}{4}W$	1
R13	" 820 Ω " $\frac{1}{4}W$	1	R35	WIRE WOUND 1 Ω $\pm 10\%$ $\frac{1}{4}W$	1
R14	" 100 Ω " $\frac{1}{8}W$	1	R36	CARBON 680 Ω $\pm 5\%$ $\frac{1}{4}W$	1
R15	" 430K Ω " $\frac{1}{4}W$	1	R37	" 18K Ω " $\frac{1}{8}W$	1
R16	" 150K Ω " "	1			

—CAPACITORS—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
C1	MYLAR 0.047 μF $\pm 10\%$ 50WV	1	C10	MICA 50pF $\pm 10\%$ 500WV	1
C2	" 0.033 μF $\pm 20\%$ "	1	C11	" 75pF " "	1
C3	" 0.07 μF " 200WV	1	C12	ELECT. (Multi-type) 8+8+2+2 μF 350WV	1
C4	ELECT. 10 μF 15WV	1	C13	MICA 100pF $\pm 10\%$ 500WV	1
C5	" 1 μF 350WV	1	C14	MYLAR 0.01 μF $\pm 20\%$ 200WV	1
C6	MYLAR 0.01 μF $\pm 20\%$ 200WV	1	C15	" 0.003 μF $\pm 10\%$ 250WV	1
C7	MICA 300pF $\pm 10\%$ 400WV	1	C16	ELECT. 50 μF 25WV	1
C8	MYLAR 0.0022 μF " 100WV	1	C17	MYLAR 0.0022 μF $\pm 20\%$ 250WV	1
C9	ELECT. 50 μF 6WV	1			

Electrical Parts List

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
C18	OIL 0.003 μ F $\pm 20\%$ 600WV	1	C23	FILM 4000pF $\pm 20\%$ 600WV	1
C19	ELECT. 2 μ F 15WV	1	C24	MICA 500pF $\pm 10\%$ 400WV	1
C20	OIL 0.1 μ F $\pm 20\%$ 600WV	1	C25	" 0.002 μ F " "	1
C21	MP 1.5 μ F + 0.5 μ F 250WV	1	C26	MYLAR 0.01 μ F $\pm 20\%$ 200WV	1
C22	ELECT. (Multi-type) 40 μ F $\times 2$ 350WV	1	C27	TRIMMER CAPACITOR 200pF	1
			C28	OIL TUBULAR 0.05 μ F $\pm 20\%$ 400WV	1

—WIRES—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
	P. V. C. WIRE BLACK 1.7 ϕ			P. V. C. WIRE ORANGE 1 ϕ	
	" BROWN "			" YELLOW "	
	" RED "			SHIELDED WIRE WHITE 3.2 ϕ	
	" ORANGE "			" RED "	
	" YELLOW "			" YELLOW "	
	" GREEN "			" RED and WHITE (TWO CONDUCTORS)	
	" BLUE "			" RED 2.5 ϕ	
	" PURPLE "			" GREEN "	
	" GRAY "			" WHITE "	
	" WHITE "			" WHITE and YELLOW (TWO CONDUCTORS)	
	" BLACK 2.3 ϕ			" RED and YELLOW (TWO CONDUCTORS)	
	" GREEN "			SPAGHETTI BLACK 8 ϕ	
	" WHITE "				
	" BLACK 1 ϕ				
	" RED "				

—ACCESSORIES—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
	INSTRUCTION MANUAL (ENGLISH ONLY)	1		TAPE TALK	1
	MICROPHONE F-96	1		POLYETHYLENE BAG, Microphone	1
	TAPE	1		POLYETHYLENE BAG, Set	1
	AUTO REEL R-5S (E)	1		CARTON BOX, Outside	1
	CONNECTING CORD RK-36	1		CARTON BOX, Inside	1
	EARPHONE, Crystal	1		CARTON CUSHION	1
	SONY-OIL OL-1K	1		STAND, Microphone	1
	SPlicing TAPE	1		POLYETHYLENE BAG, Accessory	1
	HEAD CLEANING RIBBON	1		Desiccant	1

Mechanical Parts List

CABINET & APPEARANCE ITEM

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
A1	CABINET ASSEMBLY, incl.	1	A9	KNÖB, Tone Control	1
A1-1	Cabinet, Main Body	(1)	A10	KNÖB, SPEED SELECTOR	1
A1-2	Cabinet, Lid	(1)	A11	KNÖB, INSTANT STOP	1
A1-3	Mesh, Front Grill	(1)	A12	BUTTON, FAST FORWARD	1
A1-4	Ornamental Strip, Front Grill	(1)	A13	FELT WASHER, Fast Forward Button	1
A1-5	Badge, Front Grill	(1)	A14	BUTTON, RECORD	1
A1-6	Dust Proof Cloth, Front Grill	(1)	A15	KNÖB, FUNCTION SELECTOR, incl.	1
A1-7	Cushion Buffle, Speaker	(1)	A15-1	Setting Screw, Function Selector Knob	(1)
A1-8	Foot, Rubber	(3)	A16	CARRYING HANDLE, Leather	1
A1-9	Stopper, Rubber Foot	(3)	A17	LEAF SPRING, Handle	1
A1-10	Foot, Mould	(4)	A18	FIXTURE, Handle	2
A1-11	Cushion, Reel Support	(2)	A19	WASHER, Chassis Fixing (Special)	2
A1-12	Pocket Lid with Lock	(1)		Screw	
A1-13	Lock Plate, Pocket Lid	(1)	RK⊕ 2.6×10	Control Sash	2
A1-14	Lock, Cabinet	(2)	T⊕ 3×8	Reel Panel	2
A1-15	Catch, Cabinet Lock	(2)	T⊕ 3×30	Head Cover	2
A1-16	Hinge, Cabinet & Lid (pair)	(2)	T⊕ 4×25	Rubber Foot	4
A1-17	Ventilator Escutcheon	(2)	RK⊕ 4×25	Carrying Handle	2
A1-18	Fan Cover	(1)		Chassis Fixing with Cabinet	2
A1-19	Retaining Plate, Fan Cover	(1)		Wood Screw	
A1-20	Shield Plate, Cabinet Front	(1)	RK⊕ 2×10	Ornamental Strip	4
A1-21	Shield Plate, Cabinet Bottom	(1)	R⊕ 2.1×10	Jack Escutcheon	4
A1-22	Badge "SONY", Cabinet Lid	(1)		Lock Plate, Pocket Lid	2
A1-23	Safety Guide, Function	(1)	RK⊕ 2.1×10	Hinge, Cover Side	6
	Selector Knob in Cabinet Lid			Hinge, Cabinet Side	6
A1-24	Special Screw, Speaker Mounting	(4)	R⊕ 2.6×8	Retaining Plate, Fan Cover	3
A3	JACK ESCUTCHEON, Cabinet Side	1		Lock	4
A4	REEL PANEL ASSEMBLY, incl.	1	RK⊕ 2.6×8	Pocket Lid	4
A4-1	Reel Panel	(1)	R⊕ 2.7×10	Ventilator Escutcheon	8
A4-2	Decoration Panel, Left	(1)		Safety Guide, Function Selector Knob	2
A4-3	Decoration Panel, Right	(1)	R⊕ 3.1×12	Mould Foot	4
A4-4	Decoration Panel, Middle	(1)		Tapping Screw	
A4-5	Tape Counter Cover	(1)	R⊕ 2.7×16	Fan Cover	6
A4-6	Tape Guide	(2)		Nut	
A4-7	Indicating Plate, Speed Selector	(1)	N 3φ	Lock Catch	2
A4-8	Earth Lug, Tape Guide	(2)		Badge, Front Grill	1
A4-9	Felt	(1)		Speaker	4
A4-10	Nut 2.6φ, Tape Guide	(1)	N 4φ	Rubber Foot	3
A5	HEAD COVER	1		Spring Washer	
A6	CONTROL SASH ASSEMBLY, incl.	1	SW 3φ	Lock Catch	2
A6-1	Control Sash	(1)		Badge, Front Grill	1
A6-2	Lens, Knob Indicators	(2)		Speaker	4
A6-3	Pilot Lamp Escutcheon	(1)		Washer	
A6-4	Felt, white & small	(3)	W 2.6φ	Retaining Plate, Fan Cover	9
A6-5	Felt, black & long	(1)	W 3φ	Lock Catch	2
A6-6	Felt, black & short	(1)		Speaker	4
A7	DECORATION WASHER	2		Badge, Front Grill	1
A8	KNÖB, Volume Control	1	W 4φ	Rubber Foot	3

MECHANICAL ITEM

—MAIN CHASSIS—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MA1	BASE PLATE (CHASSIS), incl.	1		Screw	
MA1-1	Thrust Disc, Vulcanized Fiber	(1)	RF⊕ 2×4	Leaf Switch	2
MA2	BRACKET, Volume & Tone Control	1	RF⊕ 3×4	Leaf Switch Bracket	1
MA3	BRACKET, Jack Plate	1	RF⊕ 3×6	Volume & Tone Control Bracket	2
MA4	BRACKET, Leaf Switch	1		Jack Plate Bracket	3
MA5	CHASSIS, Power Supply	1		Micro Switch Mounting Plate	1
MA6	CLAMP, Capacitor 0.05μF	1		Micro Switch	2
MA7	MOUNTING PLATE, Micro Switch	1		Bracket, Track Change Switch	2
MA8	BRACKET, Track Change Switch	1	RF⊕ 3×8	Voltage Selector Mounting Post (Closed to Power Trans.)	1

Mechanical Parts List

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
B \oplus 3 \times 8	Voltage Selector Mounting Post (Apart from Power Trans.)	1		Micro Switch Mounting Plate	1
RF \oplus 4 \times 6	Power Supply Chassis	4		Micro Switch	2
R \oplus 3 \times 6	Tapping Screw Capacitor Clamp	1		Bracket, Track Change Switch	2
SW 2 ϕ	Spring Washer Leaf Switch	2	SW 4 ϕ	Voltage Selector Mounting Post (Closed to Power Trans.)	1
SW 3 ϕ	Volume & Tone Control Bracket	2		Power Supply Chassis	4
	Jack Plate Bracket	3	W 2 ϕ	Washer Leaf Switch	2
	Leaf Switch Bracket	1	W 3 ϕ	Micro Switch Mounting Plate	1

—REWIND MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MK1	IDLER, incl.	1		Screw	
MK1-1	Felt, Oil Absorber	(1)	RF \oplus 2 \times 20	Buffer Spring	1
MK2	BELT, Idler	1	RF \oplus 3 \times 6	Retaining Arm	2
MK3	PAPER WASHER 5 ϕ , Idler	1		Arm Control Lever	1
MK4	OIL RING, Idler	1		Spring Washer	
MK5	SPECIAL WASHER, Idler	1	SW 3 ϕ	Retaining Arm	2
MK6	ARM, Idler, incl.	1		Arm Control Lever	1
MK6-1	Brake Shoe	(1)		Washer	
MK7	ARM, Idler Belt Retaining	1	W 3 ϕ	Retaining Arm	2
MK8	LEVER, Arm Control	1		Arm Control Lever	1
MK9	SPACER, Arm Control Lever	1		Stop Ring	
MK10	SPRING, Arm Control Lever	1	E-4	Idler	1
MK11	SPRING, Buffer for Idler Arm	1	E-5	Idler Arm	1
MK12	SPLIT NUT 2 ϕ , Buffer Spring	1	2.5 \times 5	Eyelet Buffer Spring	2

—CAPSTAN IDLER MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
ML1	ARM, Idler	1		Screw	
ML2	SHAFT, Idler Arm (Speed Selector Lever Guide Shift)	1	RF \oplus 3 \times 6	Idler Release Lever	1
ML3	SPRING, Idler Arm	1		Spring Washer	
ML4	SPRING, Idler Arm Shaft (Vertical Use)	1	SW 3 ϕ	Idler Arm Shaft	1
ML5	LEVER, Idler Release	1		Idler Release Lever	1
ML6	SPACER, Idler Release Lever	1	W 3 ϕ	Washer Idler Release Lever	1
ML7	SPRING, Idler Release Lever	1	W 5 ϕ	Idler Arm Shaft	1
ML8	IDLER	1		Nut	
ML9	PAPER WASHER 5 ϕ , Idler	1	N 3 ϕ	Idler Arm Shaft	1
ML10	OIL RING, Idler	1		Stop Ring	
ML11	WASHER 5 ϕ , Idler	1	E-4	Idler Arm Shaft	1
				Idler	1

—MOTOR MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MM1	FAN, Motor	1	MM7	PULLEY 60 c/s, Motor	1
MM2	STOP RING, Motor Fan	1		Screw	
MM3	HUM BUCK RING, Motor	1	RF \oplus 3 \times 8	Motor Pulley	1
MM4	SUPPORT, Hum Buck Ring	1	RF \oplus 3 \times 12	Hum Buck Ring	2
MM5	MOUNTING PLATE, Motor Pulley, incl.	1	RF \oplus 4 \times 12	Motor Fixing	2
MM5-1	Set Screw, Motor Pulley Mounting	(1)		Spring Washer	
MM6	PULLEY 50 c/s, Motor	1	SW 4 ϕ	Motor Fixing	2

Mechanical Parts List

—SPEED SELECT MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MQ1	SHAFT, kncb	1	RF⊕ 3×8	Screw	1
MQ2	SPACER, Kncb Shaft	1		Lever Assembly	
MQ3	LEVER ASSEMBLY	1		Stop Ring	1
MQ4	SPRING, Lever (Horizontal Use)	1	E-4	Kncb Shaft	

—INSTANT STOP MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MR1	LEVER, Brake, incl.	1	RF⊕ 3×6	Lever, Kncb	1
MR1-1	Stop Shoe	(1)		Lever, Aligning Plate	2
MR2	SPACER, Brake Lever	1	SW 3φ	Spring Washer	
MR3	LEVER, Knob	1		Brake Lever	1
MR4	SPACER, Lever	1		Lever, Knob	1
MR5	ALIGNING PLATE, Lever	1	W 3φ	Lever Aligning Plate	2
MR6	SPRING, Lever	1		Washer	
MR7	SPRING, Brake Lever	1		Lever Aligning Plate	1
RF⊕ 3×6	Screw	1		" " "	1
	Brake Lever			" " "	2

—MISCELLANEOUS—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MS1	CAM, Micro Switch	1	SW 2.6φ	Circuit Board	1
MS2	CUSHION, VU-Meter	1	SW 3φ	Track Change Switch	2
MS3	RUBBER STAPLE	9		Terminal 4P (Small)	1
MS4	CLAMP, AC Power Cord	1		Electrolytic Block Capacitors	5
MS5	SHIELD PLATE with Insulator, Circuit		SW 4φ	Output Transformer	2
	Board, incl.	1		MP Capacitor 1.5+0.5μF	2
MS5-1	Shield Plate	(1)		Vacuum Tube Cushion Socket	2
MS5-2	Insulator	(1)		Voltage Selector	2
MS6	JACKS PLATE	1	W 3φ	Power Transformer	2
MS7	POST, Voltage Selector Mounting	2		Washer	
MS8	FIXTURE, Printed Circuit Board	1	W 4φ	Fuse Holder (Small)	1
	Screw			Electrolytic Block Capacitors	4
RF⊕ 2.6×4	Track Change Switch	2	R⊕ 3×4	MP Capacitors 1.5+0.5μF	1
RF⊕ 2.6×6	Shield Plate for Circuit Board	2		Voltage Selector	2
	Circuit Board	1		Output Transformer	1
	Speaker Switch	2	N 3φ	Tapping Screw	
RF⊕ 3×6	Terminal 4P (Small)	1		2P Terminal, Hum Buck Coil	2
	Electrolytic Block Capacitors	4		Nut	
	Output Transformer	1	N 4φ	Terminal 4P (Small)	1
	MP Capacitor 1.5+0.5μF	2		Electrolytic Block Capacitors	1
	Voltage Selector	2		Output Transformer	1
RF⊕ 3×8	Output Trans. & Terminal 5P	1	3×6	Vacuum Tube Cushion Socket	2
	Fuse Holder	1		Power Transformer	2
RF⊕ 3×10	Vacuum Tube Cushion Socket	2		Set Screw	
	Spring Washer			Micro Switch Cam	2
SW 2.6φ	Shield Plate for Circuit Board	2			

—HEAD DECK—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MB1	HEAD BASE PLATE ASSEMBLY	1	MB7	SPRING, Pinch Lever	1
MB2	PINCH LEVER ASSEMBLY	1	MB8	SPRING, Pinch Roller Shaft	1
MB3	LEVER, Pinch Roller Shift	1	MB9	SPACER, Pinch Roller Shaft	1
MB4	JOINT, Pinch Lever & Shifter	1	MB10	NYLON WASHER, Pinch Roller Shifter	
MB5	SHAFT, Pinch Roller	1		Shaft	1
MB6	SHAFT, Pinch Roller Shifter	1	MB11	BEARING, Capstan Shaft	1

Mechanical Parts List

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MB12	SUPPORT, Capstan Bearing	1		Screw	
MB13	TAPE PAD HINGE, Rec/PB Head	1	RF⊕ 2×8	Erase Head	2
MB14	TAPE PAD HINGE, Erase Head	1	RF⊕ 2.6×3	Tape Pad Hinge	4
MB15	TAPE SUPPORT, Left	1	RF⊕ 2.6×6	Tape Support, Right	1
MB16	TAPE SUPPORT, Right	1	RF⊕ 2.6×8	Vertical Adjust for Head	1
MB17	SHIFTER, Tape Pad	1	RF⊕ 3×4	Shifter Shaft	2
MB18	TAPE GUIDE	2	RF⊕ 3×6	Bearing Support	3
MB19	SPRING, Tape Guide Height Adjusting	2	B⊕ 3×8	Joint	1
MB20	SCREW, Rec/PB Head Height Lock	1	T⊕ 3×8	Tape Pad Shifter	1
MB21	SPRING, Rec/PB Head Vertical Adjusting	1	RF⊕ 3×12	Tape Guide	2
MB22	RING CAP, Capstan Bearing	1	RF⊕ 4×6	Head Base Plate	3
MB23	OIL RING, Capstan Bearing	1		Spring Washer	
MB24 (MD6)	LEVER, Record (without button)	1	SW 2φ	Erase Head	2
MB25	WASHER, Record Lever (Vulcanized Fiber)	1	SW 2.6φ	Tape Support, Left	1
MB26	FLY WHEEL ASSEMBLY	1	SW 3φ	Bearing Support	3
MB27	NYLON WASHER, Fly Wheel	2	SW 4φ	Head Base Plate	3
MB28	PINCH ROLLER	1		Washer	
MB29	OIL RING, Pinch Roller	1	W 2.6φ	Tape Pad Hinge	4
MB30	NYLON WASHER 16φ (Outer Diameter), Pinch Roller	1	W 4φ	Pinch Roller Shaft (Small)	1
MB31	NYLON WASHER 8φ (Outer Diameter), Pinch Roller	1	LW 3φ	Lock Washer	
MB32	TAPE PAD, Rec/PB Head	1		Tape Guide	2
MB33	TAPE PAD, Erase Head	1		Tape Pad Shifter	1
MB34	TAPE GUIDE, Left	1		Stop Ring	
			E-3	Pinch Roller Shaft	2
				Pinch Roller	1
			E-4	Pinch Roller Shifter Shaft	2
			E-5	Pinch Lever Shaft	1

—FUNCTION SELECTOR MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MC1	SHAFT, Function Selector Cam	1		Screw	
MC2	CAM, Function Selector, incl.	1	RF⊕ 3×6	Joint Lever	1
MC2-1	Set Screw, Function Selector Cam	(2)		Slide Lever	2
MC3	SPACER, Function Selector Cam Shaft	1	RF⊕ 3×10	Stepper Arm	1
MC4	ARM, Stepper	1		Spring Washer	
MC5	SPACER, Stepper Arm	1	SW 3φ	Stepper Arm	1
MC6	SPRING, Stepper Arm	1		Joint Lever	1
MC7	JOINT LEVER, Function Selector Cam & Slider	1		Slide Lever	2
MC8	SPACER, Function Selector Joint Lever	1	W 3φ	Washer	
MC9	SLIDE LEVER, Function Selector	1		Stepper Arm	1
MC10	SPACER, Function Selector Slide Lever	2		Joint Lever	1
				Slide Lever	2

—RECORD MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MD1	CAM, Lock Plates	1	MD13	STOP RING, Button Lever	1
MD2	LOCK SLIDER	1		Screw	
MD3	SPACER, Lock Slider	1	RF⊕ 3×6	Lock Slider	1
MD4	LOCK LEVER	1	RF⊕ 4×10	Cam	1
MD5	SPRING, Lock Lever	1		Spring Washer	
MD6 (MB24)	LEVER, Button	1	SW 3φ	Lock Slider	1
MD7	WASHER 6φ, Button Lever (Vulcanized Fiber)	1	W 3φ	Washer	
MD8	PULL LEVER, Rec/PB Switch	1		Lock Slider	1
MD9	PULL ROD, Rec/PB Switch	1	E-4	Stop Ring	
MD10	BUFFER SPRING, Pull Rod	1	E-5	Lock Lever	1
MD11	SPLIT NUT 2φ, Pull Rod	1	E-6	Cam Shaft	1
MD12	SPRING, Rec/PB Switch	1		Button Lever	1
			2.5×5	Eyelet	
				Pull Rod	1

Mechanical Parts List

—TAKE-UP REEL TABLE MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MF1	TABLE ASSEMBLY, incl.	1	MF14	WASHER 5φ, Idler	1
MF1-1	Table, Top Part	(1)	MF15	ARM, Brake, incl.	1
MF1-2	Table, Lower Part	(1)	MF15-1	Brake Shoe	(1)
MF1-3	Felt, Friction	(1)	MF16	SPACER, Brake Arm	1
MF1-4	Thrust Washer	(1)	MF17	SPRING, Brake Arm	1
MF1-5	Spring, Friction	(1)		Screw	
MF2	DRUM ASSEMBLY, incl.	1	RF⊕ 3×6	Brake Arm	1
MF2-1	Felt, Friction	(1)	T⊕ 3×8	Top of the Table Shaft	1
MF2-2	Felt, Oil Absorber	(1)		Spring Washer	
MF3	SHAFT, Table	1	SW 3φ	Brake Arm	1
MF4	SPACER Support	1	SW 4φ	Table Shaft	1
MF5	SUPPORT, Drum	1		Washer	
MF6	FELT, Oil Absorber on Support	1	W 3φ	Brake Arm	2
MF7	ARM, Idler	1	W 5φ	Idler Arm Shaft	1
MF8	SHAFT, Idler Arm	1		Nut	
MF9	SPRING, Idler Arm Shaft (Vertical Use)	1	N 4φ	Table Shaft	1
MF10	SPRING, Idler Arm (Horizontal Use)	1		Stop Ring	
MF11	IDLER	1	E-4	Idler Arm Shaft	1
MF12	PAPER WASHER 5φ, Idler	1		Idler	1
MF13	OIL RING, Idler	1	E-8	Table	1

—FAST FORWARD MECHANISM—

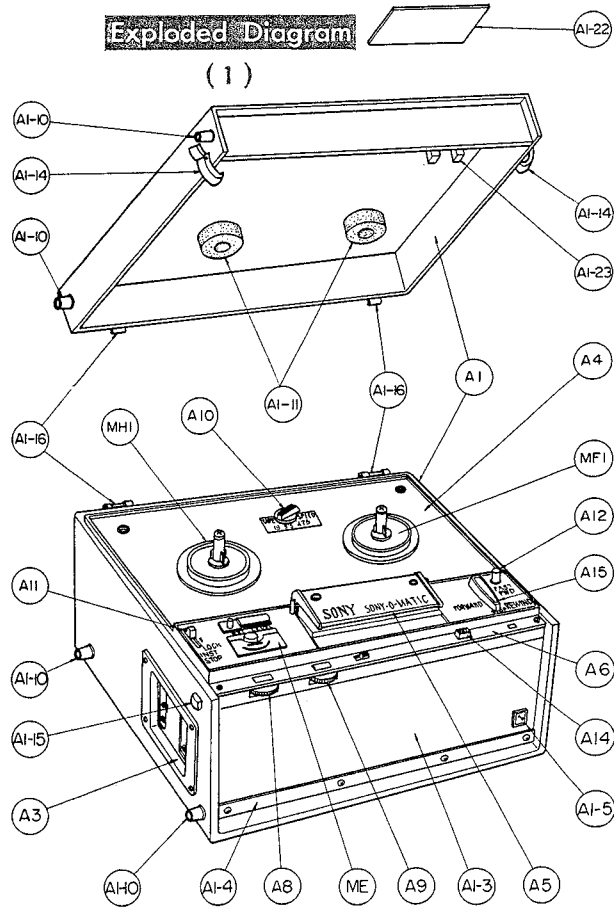
Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MG1	CLANK	1		Tapping Screw	
MG2	PIN, Clank Holding	1	R⊕ 3×6	Clank Bracket	2
MG3	BRACKET, Clank	1		Nut	
MG4	LEVER, Lock	1	N 3φ	Lock Lever Shaft	1
MG5	SHAFT, Lock Lever	1		Stop Ring	
MG6	SPRING, Lock Lever Shaft	1	E-5	Lock Lever Shaft	1
MG7	NYLON WASHER, Button	1		Spring Washer	
			SW 3φ	Lock Lever Shaft	1

—FEED REEL TABLE MECHANISM—

Symbol No.	Description	Q'ty	Symbol No.	Description	Q'ty
MH1	TABLE ASSEMBLY, incl.	1		Screw	
MH1-1	Table, Top Part	(1)	RF⊕ 3×6	Table Deck	2
MH1-2	Table, Lower Part	(1)		Counter Bracket	2
MH1-3	Felt, Friction	(1)		Tape Counter	2
MH1-4	Thrust Washer	(1)	T⊕ 3×8	Top of the Table Shaft	1
MH1-5	Spring, Friction	(1)		Spring Washer	
MH2	DECK, Table, incl.	1	SW 3φ	Table Deck	2
MH2-1	Felt, Friction	(1)		Counter Bracket	2
MH3	SPACER, Table Shaft	1	SW 4φ	Tape Counter	2
MH4	PULLEY, Tape Counter	1		Table Shaft	1
MH5	COUNTER, Tape Index	1		Washer	
MH6	BRACKET, Tape Counter	1	W 3φ	Counter Bracket	2
MH7	BELT, Tape Counter	1		Nut	
MH8	SHAFT, Table	1	N 4φ	Table Shaft	1
			E-8	Stop Ring	
				Table	1

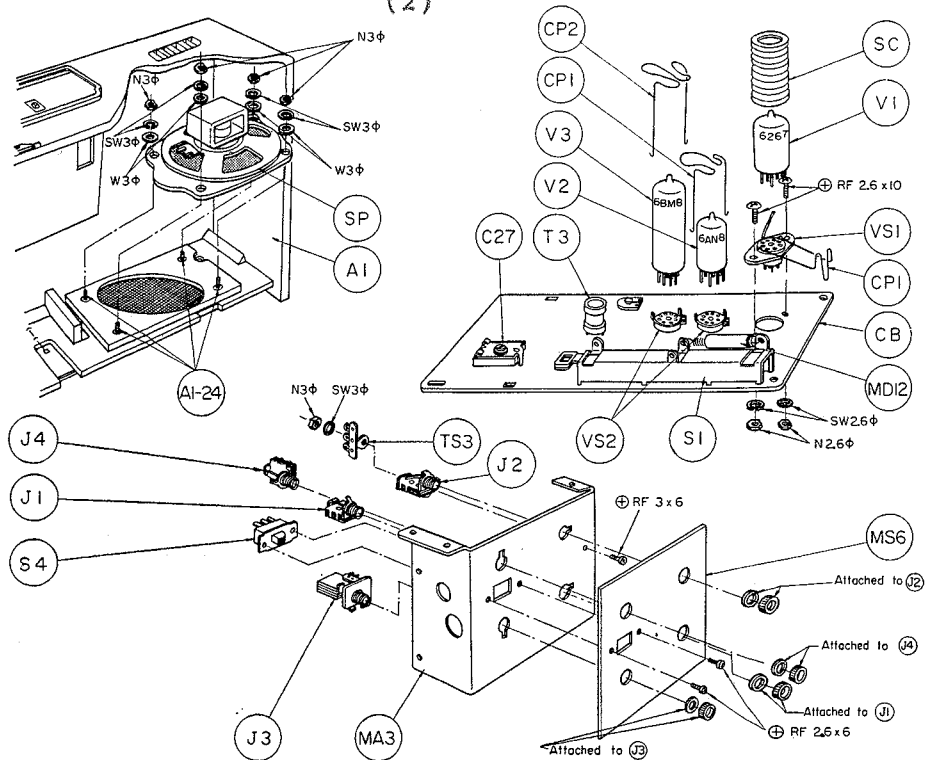
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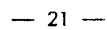


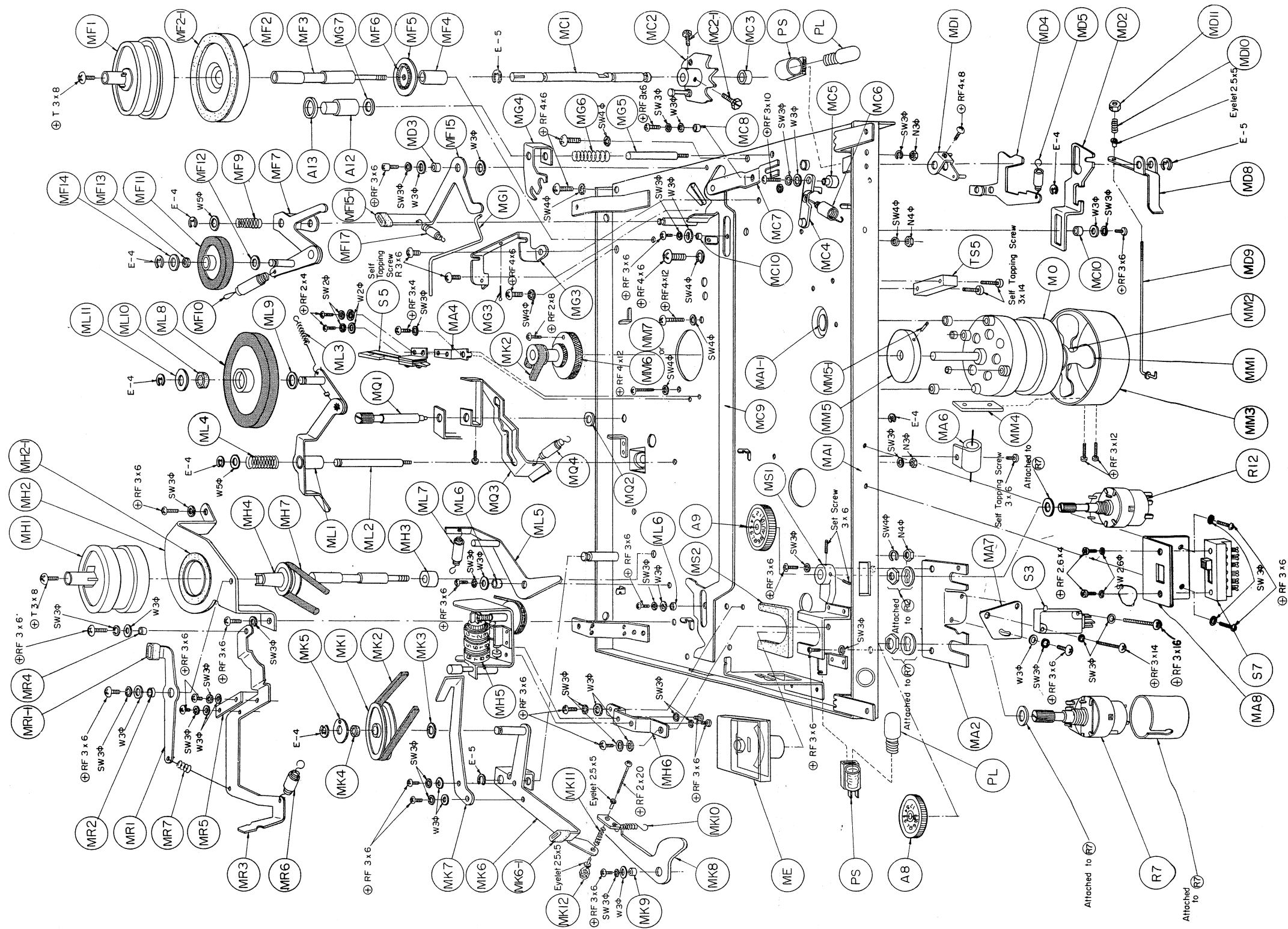
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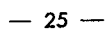


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